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ELECTROSTATICALLY-ASSISTED CENTRIFUGATION APPARATUS FOR TRANSFERRING FILTER-BOUND PARTICLES TO A SUBSTRATE FOR MICROSCOPIC ANALYSIS

Noninvasively and rapidly isolates embedded single microscopic particles

Description

This Solvent-Free Particle Extractor rapidly isolates embedded microscopic particles of interest in health, the environment, and forensics without using harsh chemicals. The process isolates single microscopic particles from a multitude of surrounding ambient particles of like size without chemically modifying the particles of interest.

The innovation uses existing low to moderately priced technologies. Users can isolate individual particles in a matter of minutes. The approach does not use polycarbonate membrane filters thus avoiding the resulting charging problems in microscopes. Additionally, users can now repeatedly locate a single particle after isolating it from within a matrix. This allows more intensive study of individual particles in laboratory analysis, which is important for forensic applications where particles must be identified and characterized with high degrees of certainty.

Applications

- **Particle analysis**
Rapidly and repeatedly locate isolated particles for intensive study
- **Microscopic particle isolation**
Enables one of a kind isolation of individual microscopic particles from similarly sized ambient particles

Advantages

- **No chemical treatment**
The solvent-free process does not damage the desired particles and minimizes the use of harmful chemicals
- **Rapid extraction**
Minimizes the extraction process to a few minutes
- **Low cost**
Harsh chemicals are not used, reducing overall costs

Abstract

The invention, a Particle Transfer Apparatus, facilitates the transfer of atmospheric particles for fibrous filter such as quartz fiber to a smooth substrate that is suitable for scanning electron microscopy (SEM) and x-ray microanalysis. The invention may also be suitable for transferring particles embedded in clothing textiles for this purpose.

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Related Items

- MERWYN Business Simulation Report

References

- U.S. Patent Application
- Docket: 09-003

Status of Availability

available for licensing

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